Our Dermatology Online

Brief Report

Diverse pathologies underlying cutaneous horns: A clinicopathological analysis with literature review

John Jomol[1,2], JP Prathibha[1,2], Bhat Ishwara[1,2], J Madhukara[1,2]

[1]Dermatology, St Johns Medical College, Bangalore, India, [2]St Johns Medical College, Sarjapura Road, Bangalore, Karnataka, India

Corresponding author: Prathibha JP, E-mail: prathibha.jp@stjohns.in

ABSTRACT

Background: Cutaneous horns are keratotic skin projections with diverse etiologies ranging from benign to premalignant and malignant lesions, making histological analysis necessary. This study analyzed clinicopathological correlations in clinically diagnosed cases. **Methodology:** A retrospective, clinicopathological analysis of cutaneous horn cases over three years was conducted. **Results:** The series comprised ten patients with an equal sex distribution and a mean age of 46.2 years, with lesions predominantly affecting the head and neck region (70%) and mostly arising from normal skin. Histopathology: benign lesions 40% (verruca vulgaris, fibrokeratoma, squamous papilloma), cutaneous horn 30%, SCC 20%, and infections 10% (chromoblastomycosis). Both SCC cases demonstrated pain and pruritus but demonstrated slower growth than benign lesions. **Conclusion:** Clinical features alone are inadequate to predict base pathology, as evidenced by diverse histological features. Paradoxically, benign lesions exhibited more rapid growth than malignant counterparts, while SCCs presented with pain and pruritus with slow progression. This clinicopathological discordance underscores complete surgical excision and histopathological correlation for all cutaneous horns to exclude malignancy and guide definitive management.

Key words: Cutaneous horn, Cornu cutaneum, Squamous cell carcinoma, Keratotic lesion, Sun-exposed skin

INTRODUCTION

Cutaneous horns (*cornu cutaneum*) are characterized as hard, conical, keratotic projections, typically white to yellow, caused by an accumulation of excess keratin and most frequently developing on sun-exposed skin areas [1]. While cutaneous horns (CH) often arise from benign underlying conditions such as seborrheic keratoses, viral warts, or trichilemmal cysts, they may sometimes indicate premalignant or malignant changes at their base. Although diagnosis can often be made clinically, histopathological examination is frequently required to determine the specific underlying cause [2]. This study aims to correlate the clinical and histopathological findings of cases of CH.

MATERIALS AND METHODS

A three-year retrospective review of demographic, clinical, and histopathological data of patients with CH was conducted following institutional ethics committee approval (146/2025). The small sample prevented statistical analysis.

RESULTS

The study included ten patients with CH, with an equal sex distribution (5 each), with a mean age of 46.2 years (19–76 years) (Table 1). All presented with a solitary skin lesion, most commonly on the head and neck (70%, specifically, on the cheek and scalp), followed by the lower limbs (20%) and trunk (10%). Comorbidities

How to cite this article: John J, JP Prathibha, Bhat I, J Madhukara. Diverse pathologies underlying cutaneous horns: A clinicopathological analysis with literature review. Our Dermatol Online. 2026;17(3):353-357.

Submission: 01.11.2025; **Acceptance:** 18.02.2026

DOI: 10.7241/ourd.20263.11

© Our Dermatol Online 3.2026

Table 1: Demographic profile and histopathological findings in clinically diagnosed cases of the cutaneous horn

Patient	Age	Sex	Comorbidities	Duration (Years)	Rapid Growth	Site	Symptoms	Histopathology
1	19	Female	-	19	Yes	Cheek	-	Cutaneous horn
2	29	Female	-	0.5	Yes	Cheek	-	Verruca vulgaris
3	35	Male	-	10	No	Toe	Pain	Fibrokeratoma
4	37	Female	Systemic sclerosis	1	No	Forehead	Pain & itching	SCC
5	48	Female	-	1	Yes	Cheek	-	Squamous papilloma
6	49	Male	HTN	1.5	No	Lips	Pain	SCC
7	54	Male	-	4	No	Chest	Pain	Chromoblastomycosis
8	54	Male	IHD, dyslipidemia	1	No	Scalp	-	Cutaneous horn
9	61	Female	-	1	Yes	Foot	-	Cutaneous horn
10	76	Male	BPH	0.5	No	Scalp	Itching	Irritated wart

included systemic sclerosis, benign hypertension, prostatic hyperplasia, and ischemic heart disease with dyslipidemia (10% each) (Table 1). A majority (90%) of the lesions originated from clinically normal skin, with one (10%) from a pre-existing nevus. Duration ranged from 3 months to 19 years (mean: ~4 years). Forty percent experienced an accelerated growth phase lasting 1–3 months. Pain and pruritus were reported in 40% and 20% of the cases, respectively. Histopathological analysis at the base of the CH demonstrated a wide range of findings: 40% were benign (including warts, fibrokeratoma, and squamous papilloma), 20% were malignant SCC (Fig. 1a – 1d), 10% represented an infection (chromoblastomycosis) (Fig. 2a and 2b). Thirty percent of the cases showed findings consistent with cutaneous horns (parakeratosis, hyperkeratosis, and hypergranulosis) (Fig. 3a – 3c). Pain and itching were noted in both benign and malignant (SCC) lesions, while rapid growth was reported only in benign cases. Two patients with SCC presented with CH arising from normal skin; a 49-year-old hypertensive male with a painful lesion on the lower lip and a 37-year-old female with systemic sclerosis on methotrexate and tadalafil, presented with a painful, itchy lesion on the forehead. Both lesions persisted for 1 to 1.5 years without exhibiting rapid growth.

DISCUSSION

CH represents a clinical morphological entity characterized by a conical projection of compact hyperkeratosis and defined by a height at least half the diameter of the lesion's base [1,3,4]. The term dates back to the early 19th century, describing its resemblance to animal horns, although the clinical entity has been documented since the 16th century [5]. The molecular pathogenesis of CH is not fully understood. While UV radiation's role is recognized, the precise genetic alterations causing their distinct hyperkeratotic columnar shape, instead of typical scaling, remain unclear, although recent studies have suggested aberrations with keratinocyte differentiation involving filaggrin and keratin [6].

CH typically presents as solitary lesions on sun-exposed sites such as the face, scalp, and upper extremities. Susceptibility is highest in fair-skinned individuals over 50, with an epidemiological predilection for those over 60, commonly affecting the face or scalp (approx. 30%) and upper limbs (44%) [1,7-9]. UV radiation-induced damage is considered a primary pathogenic mechanism, with additional factors such as human papillomavirus infection, chronic irritation, and compromised immune surveillance also triggering the aberrant keratinization processes [3,10]. While a study by Mantese et al. observed a higher frequency in female patients, another suggests a potential difference [4]. Although typically asymptomatic, patients often seek medical attention due to cosmetic concerns or suspicion of underlying malignancy [11]. Specifically, some studies indicate that benign causes might be more common in women, whereas premalignant and malignant pathologies are more frequently associated with CH in men [7].

CH may arise from a diverse array of underlying pathologies, necessitating histopathological examination of the base for definitive diagnosis [2]. Clinically, benign CH often appears taller than its base, may exhibit a terrace morphology (horizontal, step-like contours), and typically, shows less erythema and pain at the base. Conversely, horns with underlying malignancy tend to have a wide base relative to height, lack a terrace morphology, and present with increased basal erythema and pain, ulceration, rapid growth, and development on chronically sun-damaged skin, which are findings supported by some studies [6,12,13].

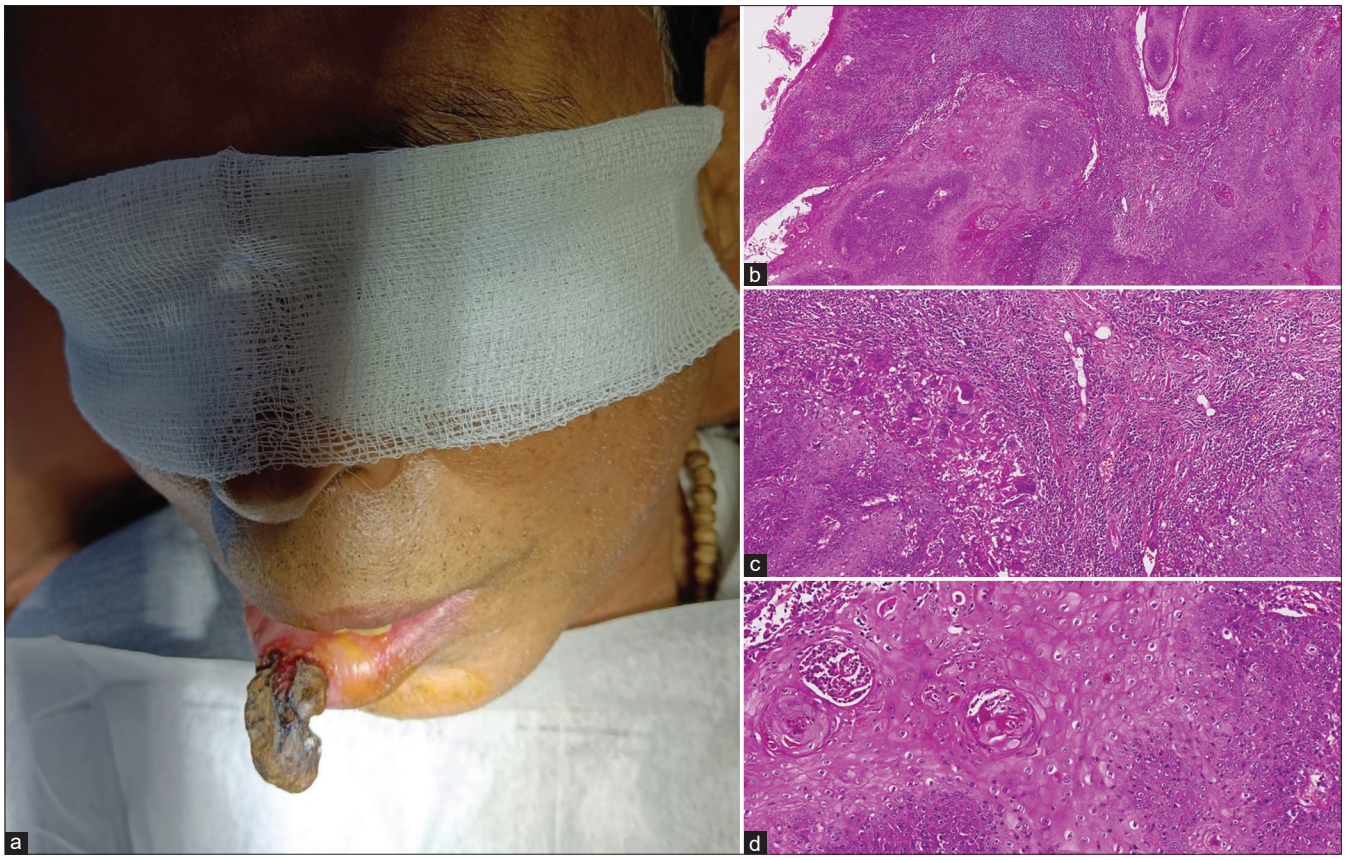

Figure 1: (a) Cutaneous horn on the lip. Histological sections of an exo-endophytic skin neoplasm arising from the epidermis and infiltrating the dermis (b: H&E, 5x), (c: H&E, 10x), (d: H&E, 20x). The tumor contains squamoid cells in nests and sheets, characterized by vesicular chromatin, conspicuous nucleoli, abundant eosinophilic cytoplasm, and occasional mitotic figures. Keratin pearls and intraepidermal neutrophilic abscesses are present, and a dense lymphoplasmacytic infiltrate with focal giant cells surrounds the tumor.

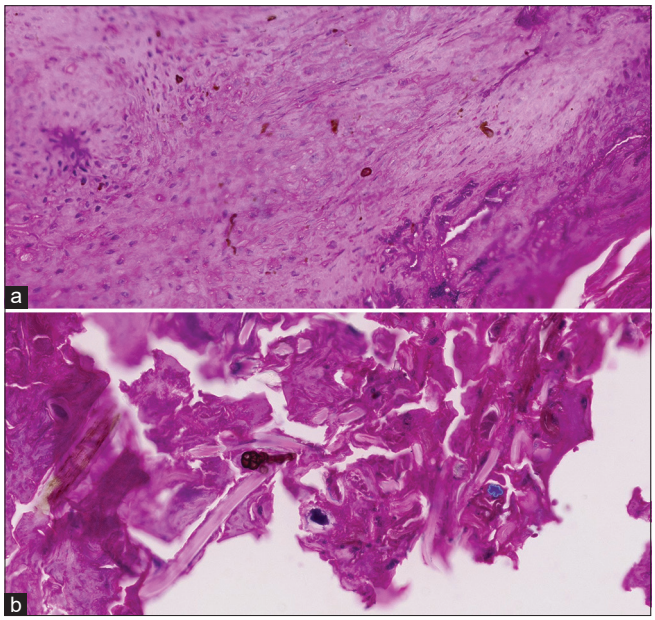

Figure 2: Chromoblastomycosis on an overlying cutaneous horn. (a and b) Histological sections: occasional pigmented fungal spores resembling copper pennies (H&E, 40x).

Our study presented a mean age of 46.2 years and an equal sex distribution. This differs somewhat from larger cohorts such as that of Mantese et al. (n = 222), who reported an older mean age (67.4 years) and a female predominance (65%), and You et al. (n = 72), who found a mean age of 54.3 years and slight female predominance (~55%) [4,14]. These demographic differences may indicate variations in population characteristics. Our sample size, however, was small.

Consistently with the literature, our cases showed a strong predilection for sun-exposed areas, primarily the head and face (70%), supporting the likely role of UV radiation in pathogenesis [4,14].

The histopathological hallmark of CH is a column of compact hyperkeratosis arranged in concentric layers. The histopathological findings in our study revealed significant variability when compared to the literature. Our small series (n = 10) found 40% benign, 20%

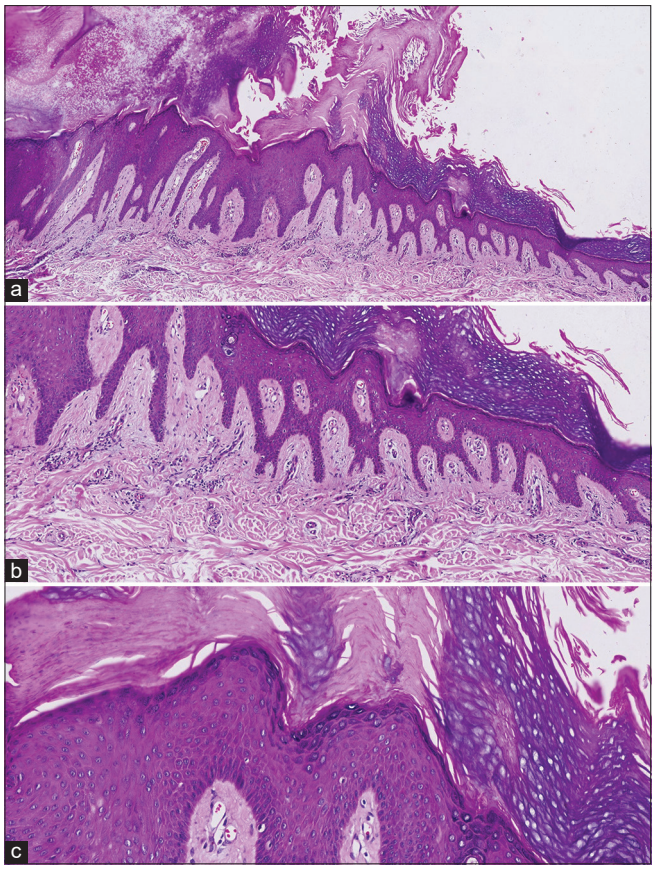

Figure 3: Cutaneous horn. Histological sections with the epidermis showing marked parakeratosis, hyperkeratosis with hypergranulosis (a: H&E, 5x), (b: H&E, 10x), (c: H&E, 20x). The dermis shows mild perivascular lymphocytic inflammation, features consistent with a cutaneous horn.

malignant (SCC), 10% infectious, and 30% consistent with cutaneous horns, suggesting that horns may appear on normal skin.

Our study indicates that clinical symptoms such as pain, itching, or rapid growth are unreliable indicators for predicting underlying cutaneous horn pathology, particularly malignancies. Facial malignancies were observed in both men and women, potentially associated with factors such as cumulative sun exposure, immunosuppression, cosmetic applications, frequent washing or cleansing. Although the reported incidence of malignancies in cutaneous horn varies across different studies, the consistent risk of these lesions harboring premalignancy or malignancy emphasizes the necessity for surgical excision and thorough histopathological examination [4,14].

In conclusion, CHs represent a morphological manifestation of diverse underlying pathologies with significant potential for malignancy. Our study indicates that benign lesions may also exhibit rapid growth, and symptoms such as pain and itching may suggest the malignant transformation of a CH. Base lesions may contain malignant cells, yet distinguishing between benign, premalignant, and malignant bases through dermatoscopy remains challenging. Their management requires clinical assessment, histopathological examination, and individualized treatment based on risk assessment to exclude malignancy. Since 20% of CH cases are associated with malignancy, clinicians must remain vigilant when assessing high-risk patients and certain anatomical regions [7].

A potential limitation of this study was the modest sample size, which could reflect underreporting or delayed presentation of CH cases. This may stem from the patients' tendency to perceive such lesions as innocuous, especially given their typically asymptomatic nature or minimal impact on day-to-day function, reducing the urgency to seek medical attention.

CONCLUSION

This analysis of ten cutaneous horn cases highlights their clinical and pathological heterogeneity, with a predominance in sun-exposed areas, especially the head and face. Despite diverse histopathologies, including benign and infectious lesions, 20% harbored squamous cell carcinoma. Symptoms and rapid growth were not reliable indicators of malignancy, emphasizing that clinical assessment alone cannot predict the underlying pathology. Therefore, complete surgical excision with thorough histopathological evaluation is imperative for accurate diagnosis and management, ensuring premalignant or malignant lesions are not missed.

Statement of Human and Animal Rights

All the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the 2008 revision of the Declaration of Helsinki of 1975.

Statement of Informed Consent

Informed consent for participation in this study was obtained from all patients.

REFERENCES

1. Mittal S, Ravichandran J, Shanmugasundaram S, Kanagarajan A. Verrucous cyst with cutaneous horn. Indian Dermatol Online J. 2024;15:518-20.

2. Bharali D, Marak A, Bikash C, Dey B. Inverted follicular keratosis presenting as a cutaneous horn. Indian J Dermatol. 2023;68:356.
3. Bart RS, Andrade R, Kopf AW. Cutaneous horns: A clinical and histopathologic study. Acta Derm Venereol. 1968;48:507-15.
4. Mantese SA, Diogo PM, Rocha A, Berbert AL, Ferreira AK, Ferreira TC. Cutaneous horn: A retrospective histopathological study of 222 cases. An Bras Dermatol. 2010;85:157-63.
5. Bondeson J. Everard Home, John Hunter, and cutaneous horns: A historical review. Am J Dermatopathol. 2001;23:362-9.
6. Pyne J, Sapkota D, Wong JC. Cutaneous horns: Clues to invasive squamous cell carcinoma being present in the horn base. Dermatol Pract Concept. 2013;3:3-7.
7. Yu RCH, Pryce DW, Macfarlane AW, Stuwart TW. A histopathological study of 643 cutaneous horns. Br J Dermatol. 1991;124:449-52.
8. Copcu E, Sivrioglu N, Culhaci N. Cutaneous horns: Are these lesions as innocent as they seem to be? World J Surg Oncol. 2004;2:18.
9. Kim YJ, Oh ST, Kang H, Park CJ, Park YM, Cho SH, et al. Clinicopathologic study of cutaneous horns. Korean J Dermatol. 2005;43:359-65.
10. Gould JW, Brodell RT. Giant cutaneous horn associated with verruca vulgaris. Cutis. 1999;64:111-2.
11. Fernandes NF, Sinha S, Lambert WC, Schwartz RA. Cutaneous horn: A potentially malignant entity. Acta Dermatovenerol Alp Pannonica Adriat. 2010;19:13-8.
12. Singal A, Agrawal S, Gogoi P. Cutaneous horn overlying verrucous carcinoma on face and its dermoscopic characterization. Indian J Dermatol Venereol Leprol. 2021;87:388-90.
13. Vano-Galvan S, Sanchez-Carpintero I, Ruiz R, Jaen P. Cutaneous horns: A clinical classification. J Eur Acad Dermatol Venereol. 2008;22:1038-9.
14. Kim YJ, Oh ST, Kang H, Park CJ, Park YM, Cho SH, et al. Clinicopathologic study of cutaneous horns. Korean J Dermatol. 2005;43:359-65.

Copyright by Jomol John, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Source of Support: This article has no funding source.

Conflict of Interest: The authors have no conflict of interest to declare.